TYNE & WEAR

TM

ATARI

USER GROUP

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Max's apology

Last issue had only 32 pages instead of the usual 36 pages and I also missed out the disk content. I do apologize for those short comings of the newsletter, we received a phone call asking if we could insert a four page advert. I had 3 pages still empty of material and leaving out the disk content would give me room to insert that advert. We had been assured that the advert would be dispatched in a day or two and that it will be posted first class, unfortunately we never received it and being very late in publishing the newsletter, we couldn't hold back any longer.

We still haven't received the advert we had been promised. Oh well!!! such is life, you can't always rely on promises, can you?

Below I've included John's e-mail address. There we are, you now have three e-mail addresses to get in touch with TWAUG, I am sure one of us is sure to read the mail.

Alan's e-mail: a.b.t@zetnet.co.uk

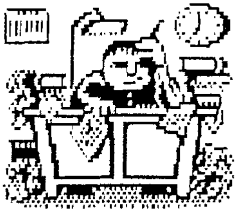
Max's e-mail: amg@zetnet.co.uk

John's e-mail =

J.Matt@Cableinet.co.uk

for Snail-Mail

Post it to this address



PUBLISHING!

This newsletter is set up with the Desktop Publishing program "TIMEWORKS 2", on the Mega 1 ST with 4 meg memory. Files received are first converted into ASCII format and then transferred to the ST usually with TARI-TALK. The files are then imported into the DTP and printed with the CANON BJ-30 Bubble Jet Printer at 360 dpi.

TWAUG

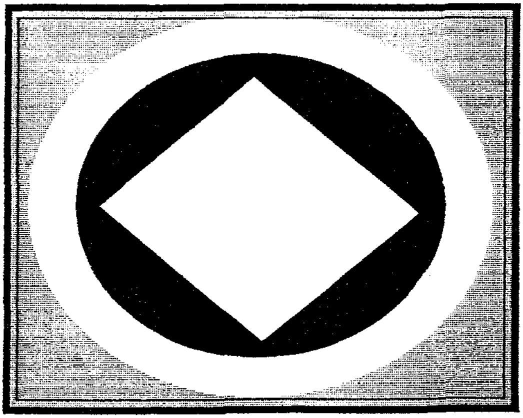
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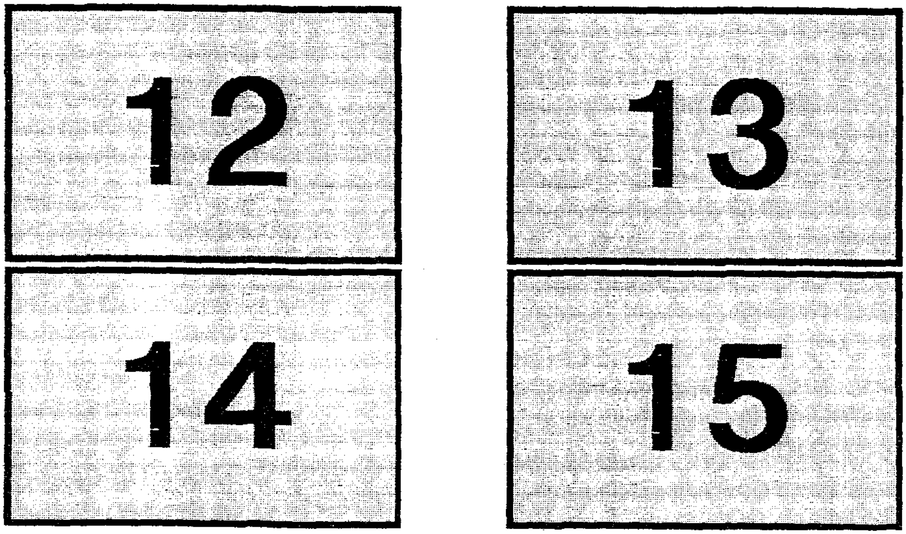
Issue 31 is due mid-March 98

ISSUE CONTENT



GRAPHICS MODES

Dave Russell concludes his series on Atari graphics with a look at the rest of the modes you access from Basic



This is the last article in the series, I'd like to take a brief look at the remaining modes which XL and XE owners can access from Basic -12, 13, 14 and 15.

Modes 12 and 13 are very similar in behaviour and only really differ from each other in pixel size. Both are split screen modes, with Mode 12 having 40 columns x 20 rows and Mode 13 having 40 columns x 10 rows. Both have a four-line Mode 0 text window.

If you type GRAPHICS 12 and press Return you'll be presented with a largely black screen. The familiar blue text window and the Ready prompt should be at the bottom.

In many books on the Atari's graphics you'll read that text is difficult to display in Modes 12 and 13. You can

GRAPHICS MODES

demonstrate this to yourself by typing PRINT #6;"ATARI USER" and pressing Return.

With the knowledge of what it's supposed to say on the screen, you might be able to decipher it. No prizes for legibility though. For this reason books that don't say these modes are difficult usually choose to ignore them completely. It makes you wonder why some list them as text modes, doesn't it?

The Program I below gives you a method of putting legible text on a Mode 12 or Mode 13 screen. Type in Program I and run it. Voila! Instant Mode 12 text without redefining characters.

I've adapted Mr. Thornton's original listing in order to encourage experimentation. With each of the SETCOLOR commands on a separate line it's easy to REMove them either individually or in combination and observe the effect.

Just use the cursor and control key to move up to the line, insert four spaces and type REM after the line number. When run the program will ignore the rest of the line.

To restore the line use the cursor and control keys to delete the REM. This method allows you to insert and delete lines repeatedly without having to re-type them.

Modes 14 and 15 both have the same resolution of 160 columns x 160 rows and both have a four line text window. Mode 14 allows two colours and Mode 15 allows four.

```
10 GRAPHICS 12
20 SETCOLOR 0,12,7
30 SETCOLOR 1,0,0
40 SETCOLOR 2,0,0
50 SETCOLOR 3,12,7
60 SETCOLOR 4,0,0
70 PRINT #6;"THIS IS NORMAL TEXT"
80 PRINT #6;"this is lower case text"
90 PRINT #6;"THIS IS INVERSE UPPER CASE TEXT"
100 PRINT #6;"this is inverse lower case text"
```

Program I

This makes Mode 15 useful because it has reasonable resolution and four colours while requiring the same amount of memory as Mode 8.

As with previous map modes we've considered, the COLOR command selects the colour to be used and SETCOLOR can be used to alter the contents of the colour registers.

In fact you can think of Mode 14 as Mode 6 but with 160 x 160

GRAPHICS MODES

```
10 GRAPHICS 2+16
20 POSITION 3,5:PRINT #6;"CHOOSE A MOD
E"
30 PRINT #6;"HOLD start TO RESET"
40 PRINT #6;"PRESS break TO END"
50 OPEN #1,4,0,"K:"
60 GET #1,X
70 CLOSE #1
80 MODE=X-48:IF MODE<3 OR MODE>8 THEN
50
90 RESTORE 400+MODE
100 READ HORIZ,VERT
110 GRAPHICS MODE+16
200 COLOR 1
210 POKE 708,RND(0)*255
215 GOSUB 300
220 IF PEEK(53279)<>7 THEN RUN
225 COLOR 2
230 POKE 709,RND(0)*255
235 GOSUB 300
240 IF PEEK(53279)<>7 THEN RUN
250 POKE 77,0
260 GOTO 200
300 FOR I=VERT TO 0 STEP -3
310 J=VERT-I
320 PLOT 0,I
330 DRAWTO HORIZ,J
340 NEXT I
360 FOR I=0 TO HORIZ STEP 3
370 J=HORIZ-I
380 PLOT I,0
390 DRAWTO J,VERT
395 NEXT I:RETURN
```

CONTINUED ON PAGE 7

instead of 160 x 80 resolution, and Mode 15 as Mode 7 with the same increase in resolution.

I had intended to write a brief resumé of all we'd covered in this series. However, my natural laziness led me to write Program II instead.

It's a ""Russell Special" - in other words, not quite finished. What I've done is to provide a simple demo for graphics Modes 3 to 8.

The program waits for you to select a mode and then reads the screen dimensions from the appropriate data statement. It then draws the pattern in the appropriate mode.

It will carry on drawing it until you either hold the Start key down or press Break or Reset.

As I said, I've done the easy bit and stopped at Mode 8. If you want to improvr the program I suggest you extend it to include Modes 9 to 15, assuming that your machine is capable of displaying them.

You'll probably need to revise what we've said about the colour

GRAPHICS MODES

```
403 DATA 39,23
404 DATA 79,47
405 DATA 79,47
406 DATA 159,95
407 DATA 159,95
408 DATA 319,191
```

Program II

registers, but maybe you could incorporate choice of registers in the data statements along with the screen size.

One non-graphics problem which you'll have to overcome results from my use of the GET statement. Line 50 opens the keyboard as a device and line 60 returns the Atascii code for the key pressed.

The trouble is GET only takes a single key-press so you can't use it to enter say 15 as a choice of modes. Of course there's more than one way to read input, isn't there?

I'd recommend that you experiment with all the programs I've listed in the series. That way you'll reach a better understanding of what you can do with each mode and therefore be able to choose the best one for each job. With a bit of luck you might discover an unusual effect, just as Mr. Thornton did. The End.

Graphics mode	Mode type	No. of columns	No. of rows		No. of colours	RAM required (bytes)	
			Split screen	Full screen		Split	Full
0	TEXT	40	-	24	1-1/2	-	992
1	TEXT	20	20	24	5	674	672
2	TEXT	20	10	12	5	424	420
3	GRAPHICS	40	20	24	4	434	432
4	GRAPHICS	80	40	48	2	694	696
5	GRAPHICS	80	40	48	4	1174	1176
6	GRAPHICS	160	80	96	2	2174	2184
7	GRAPHICS	160	80	96	4	4190	4200
8	GRAPHICS	320	160	192	1-1/2	8112	8138
9	GRAPHICS	80	-	192	1	-	8138
10	GRAPHICS	80	-	192	9	-	8138
11	GRAPHICS	80	-	192	16	-	8138
12	GRAPHICS	40	20	24	5	1154	1152
13	GRAPHICS	40	10	12	5	664	660
14	GRAPHICS	160	160	192	2	4270	4296
15	GRAPHICS	160	160	192	4	8112	8138

Modes and screen format

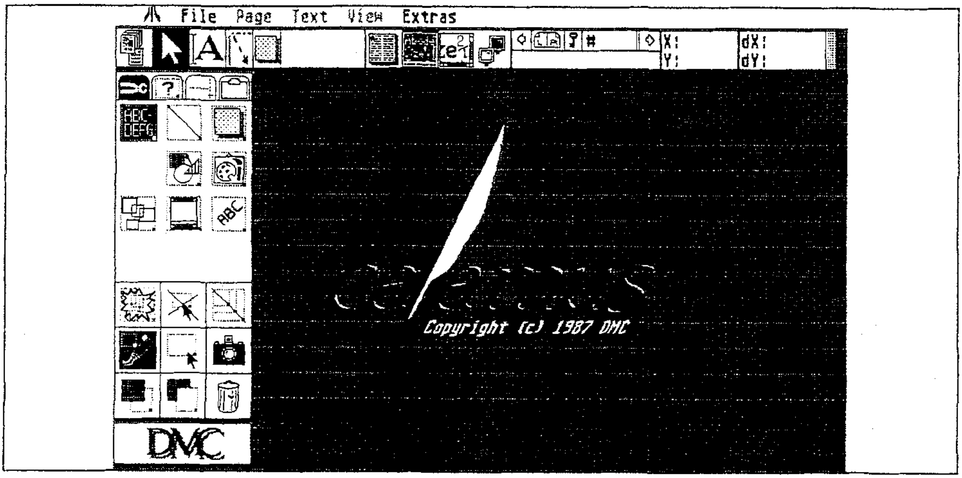
Another year is with us
We would like to wish all our
Atari friends the very best
of health, happiness
and good fortune



Have a very
Happy New Year
1998

CALAMUS

Desktop Publishing



On page 4 of issue 29 I promised that I would write about Calamus in this issue, well here it is.

Calamus is much more powerful desktop publishing program than Timeworks. In my article on Timeworks in last issue, I mentioned that it was easy to work with. Calamus is of course much more difficult to learn, I bet some of you readers will feel just that bit apprehensive about the program by just looking at the screen display above.

After I've purchased Calamus version 1.9n, in November 96, and running it the first time, I said to myself "my god what did I let myself in for" and that was by just looking at the screen. I was actually ready to through in the towel there and then. But then again I thought, this program just cost me 63 pound odd, including VAT and PP, no way can I put this package in a box and forget about it. I started reading *the manual and at the same time* running the program, and doing everything the manual said. After a

few attempts and mistakes I began to get the hang of it. Well I've been working with Calamus now for a year or so and I think I've gained sufficient experience to share it with you.

Calamus has some very good features you don't find in other desktop publishing programs. With the help of the illustration of various screens and displays of some prints, I will show you what can be achieved with the program. In this article I will explain some of the options the icons represent.

The first illustration above is the screen you are presented with when the program is first loaded. Doesn't it look rather daunting? Well, I must admit it is, but by using the tutorial in the manual you will soon get the hang of it, as I did when I started with the program.

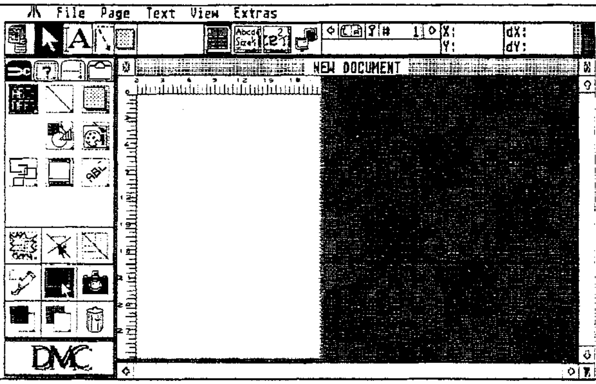
In this article I will explain briefly what all the icons represent. At least it will give, any beginner, a fairly good start. I am sure a number of new ST users want to include into their library at least one Desktop Publishing program, and these articles will give a small insight on what these programs can do.

Let's start with the text line at the top of the screen (File, Page, Text, View and Extras) identifies the various drop down menus. At the far right, on the same line, is the field for the help text. It is activated when you pass the mouse pointer over any icon or menu entry, the help text tells you the name of it. Sorry, I haven't been able to display that text with the screen dump.

The icon on the first line on the top left are the main icons. The second line of icons, there are four of them, is called the - submenu bar. Below the submenu bar is the menu box. The menu box displays all the various special function icons, they are activated when you click on a icon in the submenu bar in conjunction with the main icons. An example is on displayed in the illustration above. Look at the highlighted icons, (arrow, pincer, text and drawing tool). These icons are activated when you draw a frame to include text.

The screen displayed above is only the Calamus screen and is actually waiting for you to start a new document. Move the mouse pointer over the File pull-down menu in the menu bar, at the left side top of the screen and select the first option, CREATE NEW DOCUMENT. At this point Calamus will create the first page of the document, a single blank A4 page on the screen, it will look as in Screen 2, viewed as a full page.

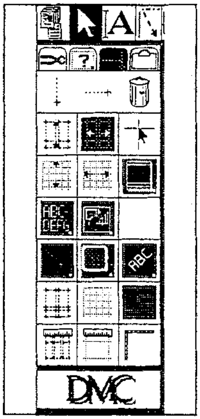
Before doing anything to the page, move the mouse pointer to the page drown-menu, which is now black looking instead of grey and select Page Layout. A dialogue box is now



Screen 2

displayed which is divided into three sections. What we are interested in is the NUMERICAL DISPLAYS in the centre section. The boxes for the four page margin display a zero value, place the mouse pointer on the last zero number and click the left button, a cursor will appear at the right of the last zero. Press ESC to clear the zeros and enter a value, depending how wide a margin you prefer, using either number key on the keyboard, but do NOT press the RETURN key. When all four margin have been entered click on OK and the dialogue box is close. NOTE: Move the cursor from one box to the next with the down cursor key or use the mouse.

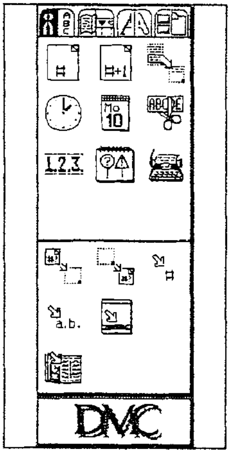
Once the dialogue box has closed you will be back in the document window, where you will see some dotted lines on the page representing the margin you have set. These are guide lines and will not print. To put text on the page, it must contain a frame. Here, Calamus has a special feature to draw the FRAME automatically by just clicking anywhere on the document page. But first we will click on the third icon in Submenu Bar, that's the icon with the horizontal and vertical dotted lines in the second icon line. You will now have been presented with different icons in the Menu Box, the same as this display. Now select the icon with the vertical dotted line with the small cross at the bottom, click on it and it will be highlighted. Move the cursor, which has changed to a cross, over the first vertical dotted line in the document window and click the left button and do the same with the right hand vertical line. A more prominent

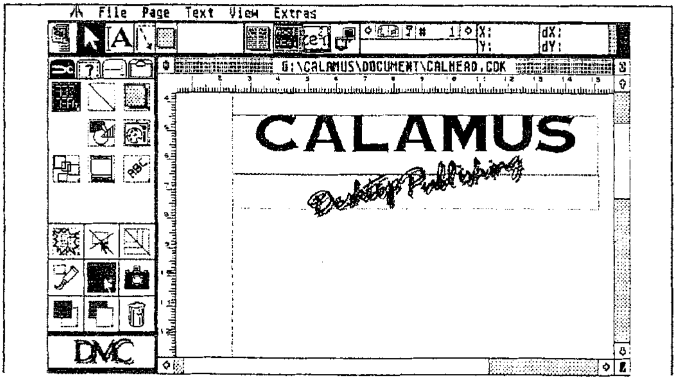


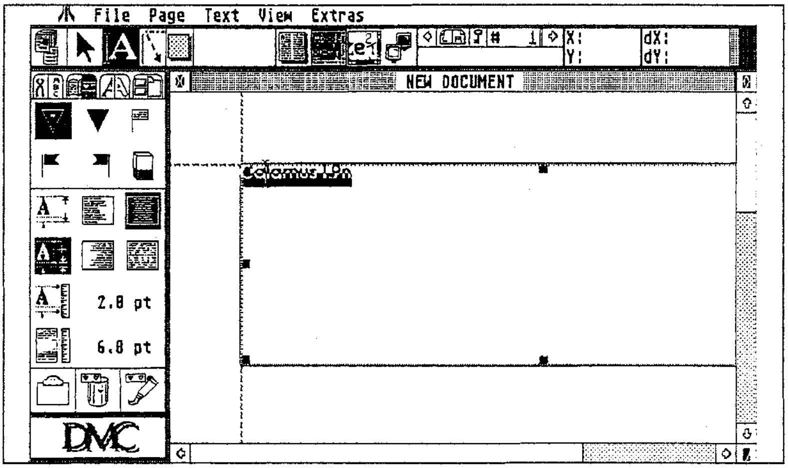
dotted line will have appeared on the margin lines, now go back and select the horizontal dotted line icon and repeat the same movements but on the horizontal margin lines.

These same icons mentioned above are in Display 3 frame. Before we leave the Guides menu page, we will activate the SNAP TO GUIDES icons, which are directly under the guides icons. Click ONCE on each icon to highlight them, when they will be active. We now return to the general frame functions menu page. To do that, click on the pincers, make sure the text frame icon is highlighted too, that the icon under the pincers icon. Now position the cursor anywhere in the window, but make sure that the ARROW CURSOR is selected, if not click ONCE on the RIGHT BUTTON. When the arrow cursor is displayed, click TWICE and your frame is drawn automatically, exactly the size the margins had been set, and no matter where the cursor was positioned when you clicked. There we have it, one special feature Calamus has to offer.

When the text Frame has been drawn you are ready to enter some text. You can either import text, which has been type in a wordprocessor or the special feature can be used Calamus has to offer. To activate that feature click on the large letter A icon, the text function. Clicking on this icon will open a different Submenu Box and also change the icons in the Menu Box. There are 8 submenu boxes and the first of these is highlighted. You can now select the special feature I've mentioned, the text editor, select the typewriter that's the right icon on the third line and click on it. You must make sure first of all before selecting the editor that a text frame is selected. The fonts and the size of the font can also be select direct from the editor, the manual explains it all. So I won't go into all the details here, but



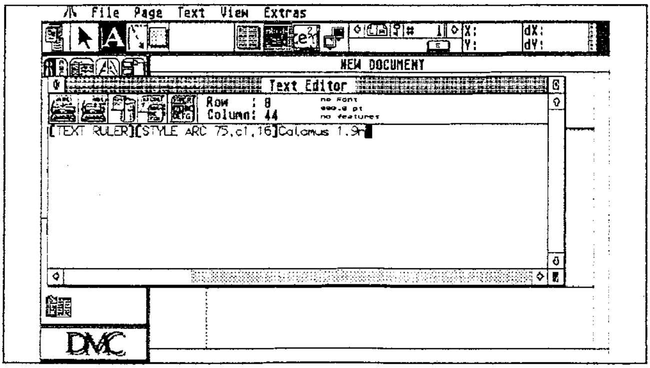




Centering Text

the editor does all the things another editor does, so you see all the facilities are on hand without having to leave Calamus.

There are seven other boxes in this Submenu, clicking on the second box displays the character set of the currently selected font. The next box displays the Dictionary, you can load, save, delete or insert



Text Editor

words. Clicking on the next box opens the main menu box, like the one shown top right of this page, displaying options for centering, left, right or full justification, to insert text rulers and decimal tabs and much more. The next box displays all the loaded fonts, next to that is the option for type size and style with the option to restyle the text. There is also the facility to set up a Macro list. These illustrations shown here are just a few of Calamus DTP features, there are many more but are to numerous to display.

Calamus also lets you print in a full circle, it can be done by entering the degrees from 0 to 360 degrees. But by using Outline Art, which is a utility specially for Calamus you can achieve some realy good pictures, some of which I am displaying here.

CALAMUS

Desktop Publishing

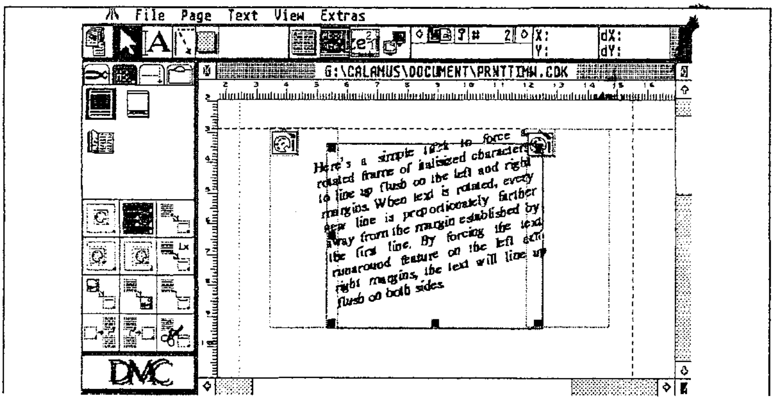
EMBOSS

This is a rotated frame of italisized characters, as you can see, when the text is printed it is proportionaly farther away from the margin established by the first line. On the next page I show you, by using a screen dump, how the text can be lined up flush on both sides.

Calamus

Desktop Publishing

As you can see this text is now lined up flush on both sides. Look closely at the screen dump. I have drawn a Raster Graphic Frame on either side of the rotated text. Highlight the text frame and click on Place text around Frame icon, you see highlighted, then click on the graphics frame holding the shift key and then click on the first icon in the secong row. Now repeat the same movement with the right graphics frame.



TWAUG

Calamus User

NEWSLETTER

The effects, in this Calamus Destop Publishing, have been created with Calamus. These are only a few of many that can be achieved.

To create this diagonal headline, first draw a Text Frame, type your text, then draw a Line Frame using a diagonal line as a guideline. Activate kerning (press ESC), using Control or Shift with Arrow keys start kerning each character.

MAGFILE 2

This article has been submitted for publication in our newsletter by CHRIS DAVIES. It is a Database program for the 8-bit machine, the program is on side A of the issue disk. The article below is the USER-GUIDE and TUTORIAL for MAGFILE 2.

By Chris Davies

You know what it's like. You need to find some information about fine scrolling, or joystick ports, or those reviews of a certain game. You know you've seen it somewhere, but where?

I've been collecting ATARI magazines, books, software, etc. for many years, and it has become very difficult to find specific articles and information. What I needed was a database with a search facility that I could enter all the information in to. So was born "MAGFILE 2". It has been designed specifically as a magazine database, however it will also handle disks, cassettes, books, etc. so that any program or piece of information can be found wherever it might be.

The program is very easy to learn and use, and the menus are self-explanatory, but I have provided this guide and tutorial to get you started.

I have included some sample files for you to examine, but as they will be written to later in the tutorial, I strongly recommend that you copy these files to another disk. You will need a data disk for your own records anyway, so it's best to do it now.

Prepare a blank, formatted DOS 2.0 or DOS 2.5 disk. 1050 and XF551 owners should use DOS 2.5 (included on this disk); 810 owners must use DOS 2.0. (you can use option 'P' from the DOS 2.5 menu). Copy the 8 files "MAG2DAT.A" - "MAG2DAT.H" to the blank disk using DOS option 'C'. When all 8 have been copied, lock them all with option 'F'. At the prompt, type D:MAG2DAT.*

Note that it is not necessary or desirable to write-protect the data disk, as the files are always re-locked after being written to.

Put the program disk in the drive and reboot. The disk will autorun, and you will be presented with a menu screen. Under the title bar is the file menu,

MAGFILE 2

then an information / message line, then a second menu. The first thing to note is that the top menu has a moving border around it. This indicates that the menu is active. The lower menu is therefore inactive. This convention applies to all menus throughout the program. If the border is stationary, the menu options are not available. The next point of interest is that all menu selections use single key-presses only. It is not necessary to press 'RETURN' except when adding or editing records, or when entering search words. Pressing 'ESCape' will, in most cases, abort the current function and return you to the previous or main menu. All incorrect key-presses are ignored. Please note that on 'Y/N' prompts, any key other than 'Y' (YES), will be taken to mean 'N' (NO).

O.K., let's run through a few options. First, replace the data disk in the drive, and from the menu select one of the files (A-H). The chosen file will become highlighted. Notice how the lower menu now becomes active, and the top one inactive.

--- VIEW RECORDS ---

Choose option '3' - View records. The number of records in the file will be displayed as the file loads into memory. The lower menu is now replaced by a sub-menu. For now, choose option '1' - Examine all records. You are now given the option of sorting the records. (The sort routine simply alphabetizes the Title field). Choose 'Y' or 'N'. This takes you to a second screen. At the top is the name of the file you have opened. Below is a "card" on which records will be displayed or entered. The first record in the file (or the first after sorting) will be on view. At the right of the headings is a 3-digit counter, presently reading 001. This is intended as a guide to your whereabouts within a file. Under the card is an information / message line, then comes the menu. Using the left and right arrow keys (without CTRL) will take you backwards and forwards through the file. There is a wrap-around feature which means you can go from the first record to the last just by going backwards with the left arrow key, and conversely from the last to the first with the right arrow key. The counter will tell you when you're back at the beginning, with a reading of 001. Examining the records will give you an idea how to enter your own later on. A record can be up to 80 bytes long, and is divided into 6 "fields". More on this in due course. Press 'ESC' to return to the

MAGFILE 2

main menu.

Repeat the operations above, but select option '2' - Search for specific records, from the sub-menu. This will give you a choice of three fields to search on. Try 'S' for Source. You will then be prompted for a search word. A flashing cursor will appear, with a mask relating to the length of the chosen field. Your typing will be in lower case unless you press 'SHIFT', but it is irrelevant to the search routine. Use 'BACKSPACE' to correct any typing errors. Type "PAGE 6" (without the quotes), and you will be informed how many records were matched. You can then sort them if desired, and they will be displayed. Examining them should reveal only entries from PAGE 6 magazines. Another example of a search would be:- If you were looking for a game review, you would select file 'E', and 'T' from the search menu, then type in the game's title. This would bring up all the magazine reviews for that particular game. As mentioned above, the search words are not case sensitive, and the routine will check the whole chosen field, or all three in the case of 'KEYWORDS'. If you are not sure of the spelling of an item you are looking for, type in just 2 or 3 letters. All possible matches will be found.

-- PRINT RECORDS --

If you have an EPSON compatible printer, let's try printing a file. If not, skip this section. Choose a file, then option '4' - Print records. Choose option '1' - Print without viewing, option '1' - Print all records, and 'Y' or 'N' to a sort. Then make sure your printer is ready (on-line, paper in, etc.), then press 'START' to print. If all goes well, you should have the contents of your chosen file appearing on your printer. If not, an error message will have been displayed, informing you of the problem. Now, back at the main menu, choose a file, then option '4'. This time choose option '2' - Print after viewing, then option '1' -Examine all records, then 'Y' or 'N'. We now have a different menu on screen 2. This is where you choose which records to print, by marking them. Run back and forth through the records marking or unmarking as you wish, using 'M'. When ready, press 'P', then 'START'. Only the records you have marked will print out.

--- EDIT RECORDS ---

Time to try some editing. Choose a file, then option '5', then 'Y' or 'N'. Choose a record to edit, then press 'E'. A flashing cursor will appear in

MAGFILE 2

the first field. Using the normal editing keys, edit each field as desired, pressing 'RETURN' to drop to the next one. Please note that the characters will be lower case unless 'SHIFT' is pressed. Also, the cursor is restricted to the margins of each field. Pressing 'RETURN' on the last field gives you the chance to undo any errors - pressing 'N' will bring back the unedited record. If you're happy with the changes, press 'Y'. A bell will indicate acceptance. Edit as many records as you wish, then press 'R' to make the changes permanent. This will re-write the amended file to disk. Pressing 'ESC' will abort the edit mode, leaving the original file unchanged, and will return you to the main menu.

- DELETE RECORDS -

The delete record option - '6', is equally simple to use. Step through the file, marking the records to be deleted with 'M', then press 'D'. If you're happy, answer 'Y' and it will be done!

--- CREATE FILES ---
and
--- ADD RECORDS ---

You are now ready to create your own files and records. If you want to use the same data disk that you created earlier, you will need to delete the sample files. Press 'RESET', then type UNLOCK "D:MAG2DAT.*" When the drive stops, type DELETE "D:MAG2DAT.*" Type DIR to check the disk is blank, then replace the program disk in the drive. Type RUN "D:MAGFILE2.TB" to re-run the program.

Now, put your data disk back in the drive, and you're ready to create your own files. If you used DOS 2.5 to format your disk, there will be room for all 8 files on one side even if they are subsequently filled. (170 records in each). This will prevent you having to change disks for different files. If you are restricted to DOS 2, you can start with all 8 on one side, but you will have to move some of them as they fill up. Or, you could put 4 on each side and flip the disk as necessary. You can, if you wish, create all 8 files straight off, or you can create each one as it is required. Every program, article, review, etc. can be entered into one of the eight files (A-H). However, there will inevitably be some 'grey areas' where an item will appear to fit two categories. Personally, in these cases, I enter it into both, which

MAGFILE 2

makes finding it easier later on. O.K., grab a magazine and create the appropriate file for the item you wish to store, then choose option '2' - Add records. This will take you to screen 2 and a blank "card". The counter will tell you the number of the record you are entering. If it's the first one you will get 001, but if, for example, there were 6 records already in the file, the counter would read 007. Enter the information as you wish - you can 'RETURN' over any fields you want left blank except for the first two. The convention is as follows:-

Title (20 chrs max. - Compulsory)
Source (10 chrs max. - Compulsory)
Keyword 1 (10 chrs max. - Optional)
Keyword 2 (10 chrs max. - Optional)
Keyword 3 (10 chrs max. - Optional)
Notes (20 chrs max. - Optional)

Bear in mind that you will want to search for specific records at a later date, so enter your data accordingly. The first two fields speak for themselves, and are unambiguous. The keyword fields are the most important, and some thought may be required when entering data into them. Choose words that are the most relevant to the item. The sample files I provided illustrate the point. The search routine will check all 3 keyword fields so there is no need to worry about a particular order. Indeed, any or all of them may be used. In the last field (NOTES), you can put anything you wish. The search routine does not cover this field, just the others.

When you have completed your entry, answer 'Y' to accept it, or 'N' to reject it. A bell will indicate acceptance. You can then make another entry in the current file, if desired, by answering 'Y', or write your new record(s) to disk with a 'N'.

Continue through the magazine, creating and adding as desired. Don't forget, if you want to change anything at all in a file, the edit function is always available.

---- USER NOTES. ----

The program is fully error-trapped, and most user errors will be rewarded with an error message. It should be impossible to crash the program or to lose any data from the disk files, as every precaution has been taken. (Someone will no doubt prove me wrong). The only exceptions to this would be to press 'RESET', to switch the computer or drive off, or to remove a disk, while a file is being rewritten. This could destroy the file or render it unreadable. The golden

MAGFILE 2

rule is:- Never interrupt disk I/O.

If you wish to exit the program, return to the file menu and press 'RESET', which will take you to the "READY" prompt in Turbo Basic. If you want to re-run "MAGFILE 2", you will either have to reload/rerun it from the program disk, or reboot the program disk. This is because the initalization code will have been deleted on the first run.

I have found DOS 2.0/2.5 to be inefficient when used with this sort of program - the files get spread all over the disk and as they grow, the access time increases disproportionately. The cure is to copy the files to a fresh disk at regular intervals.

Please note that the files DOS.SYS and GTURBO.ARS are modified versions of DOS 2.5 and TURBO BASIC respectively. In the case of the latter, Turbo Basic has been mated to the brilliant "G:" handler, (which first appeared in A.N.A.L.O.G. #35, and is what I've used for printing the records). If you have an EPSON compatible printer then beg, borrow, or steal a copy of the article - for me, it's one of the best magazine programs ever!! Similarly, I think that Turbo Basic is the best public domain disk program I've come across, so to get both for next-to-nothing is amazing. Feel free to copy my hybrid, but to get the most from "G:", you will need the article.

I must give credit to the following people whose work I have adapted for use in "MAGFILE 2":-

Tom Hudson - Flashing cursor
Charles F. Johnson - "G:" Agim Perolli - Moving border

I hope you enjoy using "MAGFILE 2" and find it as useful as I have in keeping track of thousands of items.



LEAGUE TABLES

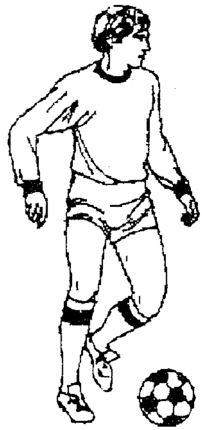
Create your very own fixture tables with MALCOLM DOMONE's neat program

If you have been looking for a league table program look no further. Enter the results from the menu option and this program will calculate the table for you. Originally written for football results, it can be used for any other table with the played, won, lost, for, against and points format - see the program modifications panel.

Once all the relevant data has been input and calculated the program will save it to disk for you. You can also create hard copies of your tables with any 80 column printer.

The best way to use the program is to save it on its own disk. Only one League Division can be created with the program, that means if you want to keep the league tables for all divisions of the English and Scottish Football leagues, you need to prepare a division on each side of the disk. It will take a while to set up, but it will be fun when you enter all the results. You can also set up a league table for the amateur leagues.

It is important that you leave the disk in the drive at all times. When first run the program will check to see if any table exists on it. At the moment none exists, so it will default to the initialisation screen. Just follow the prompts to set up your new table.



First it will ask you for the name of the division and then the number of teams in that division, i.e. (Carling Prem) and then it will ask for the number of teams = 20. Then enter the teams name in alphabetical order - this will be useful when entering data later. A team name is limited to a maximum of 14 characters in length, if you exceed this you must re-enter it. On entering the last name, the newly create table will be saved to disk.

LEAGUE TABLES

The saving and setting up may take some time because all team information will be set to zero and the data is calculated in four sort levels. The sort order is: Highest points, goal difference, goals for and alphabetically. Your disk will now contain four data files and, assuming all is well, you should see the menu screen.

This means that when you next run the program the new data files will be loaded and the menu screen will appear. Your options are:

1 Enter results
2 View league tables
3 View fixtures
4 Search fixtures
5 History tables
6 History fixtures
7 Enter team data
8 Toggle printer status

You have now reached the stage where you have to enter the team results. After selecting option 1 you will be prompted to confirm your selection - press Y followed by Return. The screen will change to allow you to enter the results.

Use the + and * keys until the home team appears on the screen. Press Return to make a selection and the name will echo back on to the screen. Enter the team's score and then select the away team and its score in the same way. Once you have made your entries the fixtures will be saved to disk followed by the league table once it has been calculated. You will then be returned to the menu screen. At the moment the printer status will be set to Off.

If set to On any information sent to the screen will also echo to the printer.

Ensure your printer is connected when using this option, as an error message may occur if it isn't. If you don't have a printer follow the instructions in the modifications panel below. Most of the other menu selections are obvious but others require some explanation.

Option 5 will display any league table. Enter the date of the table required and the program will search the disk for it. If a table doesn't exist for that date entered a message will appear on the screen.

Option 7 can be used in one ot two ways. The first is to change team data and the second is to allow data to be entered into the program during the season if games have already been played - for example, setting up a mid-season table.

Once selected you will be asked to confirm your action with Y or N. enter the date - this should be later than

LEAGUE TABLES

the one shown - and the current team data will be displayed. If no change is required just press Return.

If you want to change any data enter the new number followed by Return. A beep will be heard when a new team name is displayed.

If an error is made on any entry the team name will be re-displayed and all the data will have to be re-entered, so be careful what you type. When the changes have been made your new table is calculated and then re-saved.

And that's it. Enter your table now, but be careful when entering data as errors are not easily corrected after pressing Return.

MODIFICATIONS

The program as shown awards three points for a win. If your table awards a different number you will need to replace the 3 at the end of lines 2400 and 2410 with the new values.
If you don't have a printer add the following line to your program:

```
2965 PRS$=" *** ":GOTO 1140
```

This will inhibit the printer output if option 8 is selected.

RS-232 - a serial in 8 bits

ANDRE WILLEY explores the mysteries behind computer talk

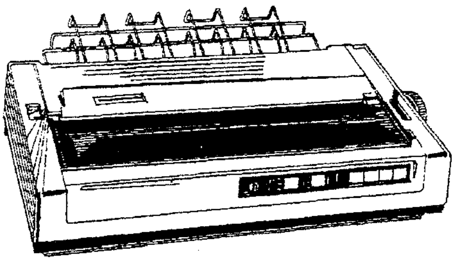
MOST people are familiar with the terms Centronics and RS-232, and many will even know that the first is a parallel system of transferring information while the latter uses a serial system. But what is the difference between the two types of interfaces - and why do we need both systems?

Well, whichever one is in use at the time, the aim is very simple - to transfer computerised information from point A to point B as quickly and efficiently as possible. In computer terms, each individual character to be sent is called a byte, and it is stored internally as a pattern of eight switches known as bits.

Some of these bits will be switch on and others will be off, and to transfer any information between a computer

RS-232 - a serial in 8 bits

and devices such as printers or modems it is necessary to transmit



these patterns down some form of connecting cable. To do this, each bit is converted into a short pulse of electricity - normally five volts for a 1 bit and zero volts for a 0 bit.

Imagine for a moment that each single bit-pulse of data within a byte is represented as a car travelling along a main road between two cities. As we would ideally like to send our eight car-bits down the road simultaneously it would seem highly logical to build an eight lane motorway so that each car would have a clear lane of it's own. Thus each car could drive alongside - or parallel to - the other seven vehicles making up a full byte, and the journey would be a fast and smooth one.

This is fine in theory, of course, but it would be rather impractical to construct eight-lane motorways all over the country, so for longer journeys we might expect to find ourselves driving along ordinary main roads with just one lane in either direction. In that case our eight cars must follow each other nose-to-tail the whole way, and the journey would take considerably longer.

This example shows how a single byte of data - or eight cars, whichever you prefer - is passed between two locations, but real-life data transfer is complicated by the fact that you rarely want to transfer a single byte on its own. More often a stream of bytes will be sent - such as printing out a full document on your word processor, or downloading a bulletin board file via a modem.

If you are using a parallel interface, such as our eight-lane motorway, there is no problem - all you need to do is send each row of eight cars down the road after the previous one has left. When they reach the other end each row, or byte. of eight cars will still be driving side-by-side and the next byte will follow straight after.

The problem occurs when using a serial interface - such as our RS-232 single-lane road. If you send another set of eight cars down the road immediately after the first, followed by another and another after that, then

RS-232 - a serial in 8 bits

there is no simple way of telling where one block of eight finishes and the next begins.

This dilemma is prevented by sending out another vehicle, say a large lorry, before each group of eight cars. Once all the vehicles reach the other end of the road they will still be in the same pattern: One lorry, eight cars and so on. In computer terms, these lorries are called start bits because they indicate where one particular byte of data starts.

To make our example completely true to the digital world of computers we will need to make one other alteration. Since a computer can only deal with bits of data which are either on or off - that is, voltage present or no voltage - we should really think of our roads as containing cars and spaces the same length as a car, rather than two differenttypes of car.

Eight-lane traffic

In the parallel motorway example, a byte such as 10000001 would have a car in the outer lane, empty spaces in the middle six lanes and another car in the inner lane. As long as every car on the road, including those in the row behind, travel at the same speed they should arrive in the same pattern.

In order to tell the computer at what speed the information is being sent, an extra signal line known as a strobe is used to provide extra syncronisation pulses. This can be thought of as a line of extra cars driving down the hard shoulder of our motorway, always running alongside each main row of cars.

If you think about it, this system also gets around another possible problem - that of how to detect zero information. Now that we dealing with cars and spaces instead of just cars it would be quite possible to mistake a row containing ONLY spaces for the gap that occurs between two rows. The extra set of cars on the hard shoulder means that we always know the difference between an empty row and a gap.

One way system

In a serial system, where we are dealing with a single lane only, speed becomes even more important since we have no hard shoulder available for sync information. What happens instead is that the speed of our car-bits is very carefully regulated so that we know that there should be, for example, one along every five

RS-232 - a serial in 8 bits

seconds. After the start bit - or lorry in our example - has arrived we know that either a car or a space will be in position for checking once every five seconds.

The speed of the bits is known as the baud rate and basically refers to the number of bits which are sent out every second - so 300 baud refers to a data rate of 300 bits per second. This count includes any start and stop bits (normally two in total), so 10 bits can convey one full byte of data - thus giving a data transfer rate of about 30 characters per second at 300 baud.

To avoid any congestion on the line, and because the receiving end may not be able to handle data as quickly as you can send it, both parallel and serial interfaces allow a system akin to traffic lights in order to tell the computer when to start and stop sending information.

When the lights are at red - indicating the peripheral is currently busy processing and can't accept any more data - the computer will twiddle its thumbs until the lights go green again. This is referred to as handshaking.

As you will probably have realised by now, parallel interfaces are very much simpler than serial, but require many more wires for the data to be sent along. This is why the Centronics parallel system is more often used for short distances - say from the computer to a printer, and the RS-232 serial system is used for longer range communications - either from room to room or even, by phone, to anywhere in the world.

Can you imaging having to use eight phone lines to send a message by modem? Well that is what would be needed if we were to design a parallel interface for telephone use. The layout used on a Centronics connector is shown in Figure I. You

Pin No.	Function
1	Strobe (Sync)
2	Data bit 1
3	Data bit 2
4	Data bit 3
5	Data bit 4
6	Data bit 5
7	Data bit 6
8	Data bit 7
9	Data bit 8
11	Busy

Figure I Centronics

will recognise the eight data links as

RS-232 - a serial in 8 bits

the eight lanes of traffic in our example, and the strobe as the hard shoulder. The Busy and Fault lines work like traffic lights.

The Busy signal goes to red to indicate that the printer can't take any more information for the moment, while the Fault signal is just the opposite and must always be switched to green for the computer to send anything at all. This prevents sending information to a printer which is not turned on, for example.

RS-232 is a far more complex issue. From Figure II you will note that there

Pin No.	Function
2	Data Out
3	Data In
4	Request to Send
5	Clear to Send
6	Data Set Ready
7	Ground
8	Carrier Detect
20	Data Terminal

Figure II - RS-232

seem to be almost as many connections as we have seen on the parallel system, which surely defeats the object of a single-lane highway for computer data. In fact the only two lines which are essential for full two way communication are Data In and Data Out. These allow data to flow along a single line in either direction -rather like a normal highway in which traffic flows opposite sides of the road.

All of the other lines operate as handshaking aids, like multiple sets of traffics lights. They are very rarely connected over long distances - more often acting as indicators to let the computer know the current status of the modem or other intermediate device.

These are especially important when sending data over telephone lines because you will often be using very slow baud rates - such as 300 or 1200/75 - which may require the computer to pause for relatively long periods.

Most of the handshaking lines refer to the Data Terminal and the Data Set. These are generalised terms, and in our case the Data Terminal would be the Atari micro itself and the Data Set would be the modem -or indeed any of the RS-232 device we might have connected.

Ready or not?

To run through the handshaking pins then, the Data Terminal Ready is

RS-232 - a serial in 8 bits

switched on by the computer to tell the modem it is ready to send or receive information. Some auto-answer modems will check to see if this signal is set before allowing themselves to answer an incoming call. Data Set Ready is just opposite the DTR - it is a signal set by the modem to say that it is also capable of communicating.

The Request To Send signal is very similar to the DTR, except that it not only says that the computer is ready to send data but actively requests the modem to make ready for transmission. Clear to Send is the modem's reply to this request, and gives the computer the green light to send its message. The only other important signal line is the Carrier Detect, and all this does is let the computer know when the modem has established a connection via the telephone line. Until this happens there is no point in the computer even getting ready to send information. Carrier Detect is often used by Bulletin Board software to tell the host computer when a call has been received and a connection made.

In fact, the full RS-232 standard lists some 20 signal lines, but most are so obscure that they are almost never used. In fact, most modems will quite happily operate with just the Data In and Data Out lines connected - and those that don't will often only need a permanently-on signal connected to their DTR line.

SOFTWARE Solutions

MICK RANDLE is the author of this helpful article.

The XIO - Extra Input-Output

command is probably the Cinderella of Atari Basic. This extremely versatile tool is actually 20 commands rolled into one, this article should give you a clear understanding of the XIO commands.

This article has been included by request.

Let's examine each component of the command syntax in turn:

```
XIO code,#IOCB,expr1,expr2,device
```

The first item after the XIO is the code number which represents the operation to be performed. Although

a variety of options are supported, many are duplicated by standard Basic commands - such as Input - and others which relate to the configuration of the 850 interface's RS232 ports.

If we disregard these we are left with the list shown in Figure I. Disk users will already be familiar with most of the options since they are available from the DOS 2.5 menu, but it is not generally realised that they are also available from Basic. As you can see, code 18 indicates the graphics fill operation.

The next component of the XIO command represents an IOCB channel number. Since the operation system always uses IOCB six for graphics output, we must also use it for the graphics fill operation. Any IOCB from one to seven may be used for the disk options, provided it is not already in use.

The next two components are only important when using the RS232 ports and they should be set to zero for all the options we are discussing. What could be easier?

The final component is the name of the device which is to be the subject of the action. The Atari considers almost everything to be a peripheral device - even the keyboard and monitor screen - and each device is given a name, such as K: for the keyboard and S: for the screen. When using the graphics fill option we must use the screen device name. Disk users must use the full disk filename to enable access to individual files.

Disk users should also be aware of a special feature of XIO. Normally, it is necessary to issue an Open command before a disk file can be accessed. This is not the case with XIO which automatically opens the IOCB, performs its task and then closes the IOCB afterwards. Program I is an example of what can be achieved from Basic. Note the neat little trick which writes DOS.SYS to the disk. Unfortunately, this does not work with the DUP.SYS file.

The graphics fill option is slightly more involved, but all will become clear when you understand why certain actions are necessary. The easiest way to explain this is to describe what happens when the Atari is told to fill a pre-drawn shape with colour.

Colouring begins at the top left corner of a shape and continues horizontally until it hits the right hand boundary of the shape. It then drops down a line and, beginning at the left edge, repeats the process until it has finished colouring the last line.

Before we can begin colouring we must tell the computer where on the

screen to start and where to stop, and which colour we want it to use. These three instructions should be executed in the correct order to avoid unpredictable results:

Define the top left point by using the Plot command.

Define the bottom left point by using the Position command.

Define the fill colour by poking the colour register number into address 765 - in the form Poke 765,2.

Program II draws and fills two shapes, so you should have no difficulty in following the process.

Now that we know how to fill existing shapes with colour we can proceed to the next stage - which provides us with a short cut. Since we use Plot and Position to indicate the top left and bottom left points of the shape, it does not matter if the left edge is not pre-drawn on the screen. Similarly, since the colour fills from left to right, any existing bottom edge will be overwritten by the XIO process.

Program III is the short cut version of Program II. Notice we don't use the Position command to define the top left corner this time -Drawto performs the same function.

As usual there are a couple of things to bear in mind when using XIO graphics fill. The left edge of a shape must be a straight line. If you have an irregular shaped polygon, you must divide it into smaller sections, each having a straight left edge, and perform several XIO commands to fill the entire shape.

Finally, since the colouring stops when it hits the right hand edge, you can only colour an area which contains the background colour -Color 4. Any other colour in the shape will be assumed to be the edge and the colouring will stop at that point.

CODE	PURPOSE	EXAMPLE
18	Graphics colour fill	XIO 18,#6,0,0,"S:"
32	Rename disc file	XIO 32,#1,0,0,"D:NAME1,NAME2"
33	Delete disc file	XIO 33,#2,0,0,"D2:FILENAME.EXT"
35	Lock disc file	XIO 35,#4,0,0,"D:FILENAME.EXT"
36	Unlock disc file	XIO 36,#2,0,0,"D4:MYFILE.OBJ"
253	Single density format	XIO 253,#1,0,0,"D:" (XL/XE only)
254	Disc format	XIO 254,#2,0,0,"D2:"

Figure I: Table of XIO commands and their function in Atari Basic

```
10 REM PROGRAM I
20 REM SOFTWARE SOLUTIONS
30 REM DOS 2.5-XIO DEMO
40 REM
50 REM
60 REM This program formats disc
70 REM so ensure that you use one
80 REM containing no useful data
90 REM
100 GRAPHICS 0
110 ? "PRESS RETURN FOR DISC
FORMAT"
120 POKE 764,255
130 IF PEEK(764)=255 THEN 130
140 ? :? "PLEASE WAIT"
150 REM
160 REM Format disc in drive 1
170 XIO 254,#7,0,0,"D1:"
180 REM
190 REM Write DOS.SYS to disc
200 OPEN #1,8,0,"D1:DOS.SYS":
210 REM
220 REM Lock the DOS.SYS file
230 XIO 35,#7,0,0,"D1:DOS.SYS"
240 END
```

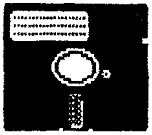
Program I: Format a disc using the XIO command

Program II: XIO fill demo →

```
10 REM PROGRAM II
20 REM SOFTWARE SOLUTIONS
30 XIO COLOUR FILL DEMO
40 REM
50 REM
60 GRAPHICS 7
70 DELAY=1000:GOSUB DELAY
80 REM
90 REM Draw a triangle
100 COLOR 1:PLOT 50,20:DRAWTO
100,70
110 DRAWTO 0,70:DRAWTO 50,20
120 GOSUB DELAY
130 REM
140 REM Colour the triangle
150 PLOT 50,20:POSITION 0,70
160 POKE 765,1
170 XIO 18,#6,0,0,"S:"
180 GOSUB DELAY
190 REM
200 REM draw a square
210 COLOR 2:PLOT 95,0
220 DRAWTO 159,0:DRAWTO
159,60
230 DRAWTO 95,60:DRAWTO 95,0
240 GOSUB DELAY
250 REM
260 REM Colour the square
270 PLOT 95,0:POSITION 95,60
280 POKE 765,2
290 XIO 18,#6,0,0,"S:"
300 GOSUB DELAY:RUN
310 REM Slow down the action
1000 FOR Q=1 TO 400:NEXT Q:
RET URN
```

```
10 REM PROGRAMIII
20 REM SOFTWARE SOLUTIONS
30 REM XIO COLOUR FILL DEMO
40 REM SHORTER VERSION OF PR
OGRAM 2
50 REM
60 GRAPHICS 7
70 DELAY=1000:GOSUB DELAY
80 REM
90 REM Draw right edge of a triangle
100 COLOR 1:PLOT 100,70:DRAWT
O 50,20
120 GOSUB DELAY
130 REM
140 REM Color the triangle
150 POSITION 0,70
160 POKE 765,1
170 XIO 18,#6,0,0,"S:"
180 GOSUB DELAY
190 REM
200 REM Draw top and right edge
210 REM of a square
220COLOR 2:PLOT 159,60
230 DRAWTO 159,0:DRAWTO 95,0
240 GOSUB DELAY
250 REM
260 REM Colour the square
270 POSITION 95,60
280 POKE 765,2
290 XIO 18,#6,0,0,"S:"
300 GOSUB DELAY:RUN
310 REM Slow down the action
1000 FOR Q=1 TO 400: NEXT Q:RE
TURN
```

Program III: Shorter version of Program 2



DISK CONTENT

On side B of this issue disk we've put a database program we've received from Chris Davies and he is also the author. The program is called MAGFILE 2 and has been specifically designed as a magazine database. If you turn to page 17 of the newsletter you will find the article describing the program and also gives a run down on how to use it. We've also included the same document on the disk as the article on page 17, so if you want to have a seperate doc file from the newsletter, you can print it out.

On side A of the disk we've included a program to set up your own football league tables. If you turn to page 23 you'll see an article 'League Table', it explains how to use the program. Once you've entered the team names and the program configured itself you can enter the weekly results and the program will calculate the tables. You can also make a hard copy of all weekly results and print out the league tables to keep track of your favourite team.

You will also find some games for your relaxation.

There is Cards 21 for the card sharps out there.

A monopoly game I believe most of you can play that, I can tell you I know, My Grandaughter loves it and when I am there she has me playing it all the time.

Creepy Cavern is another game on the disk, but unfortunately I have no idea how to play it, but I am sure all you gamesters will soon get the hang of it.

The last program but not least is DOS Wizard 1.0.4. I believe the instructions are on the disk.

That's all folks, enjoy this issue.

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O.H.A.U.G.

The OL'HACKERS ATARI USER GROUP INC.

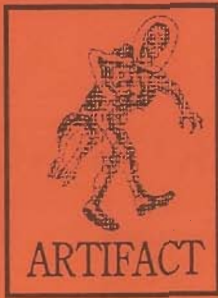
O.H.A.U.G. is an all 8-bit user group in the STATE of NEW YORK.

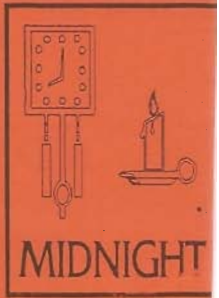
They are producing a bi-monthly double sided disk based newsletter. The disk comes with its own printing utility, which lets you read the content of the disk, one screen page at the time, and/or you can make a hard copy of the disk, in one, two or three columns and 6 to 8 lines to the inch. A large PD Library is available.
Contact:

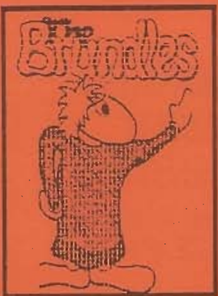
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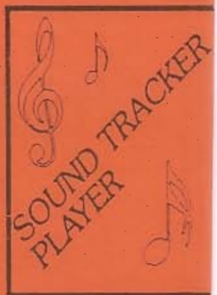


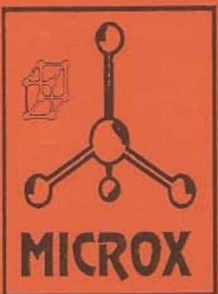
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